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March 25, 2004

Mr. Nabil S. Fayoumi  
U. S. Environmental Protection Agency - Region 5  
Superfund Division  
77 West Jackson Boulevard (SR-6J)  
Chicago, Illinois 60604-3590

**Re: Slurry Trench Cleaning and Backfilling  
Groundwater Migration Control System  
Sauget Area 2 – Sites O, Q, R and S  
Sauget, Illinois**

Dear Nabil:

During a recent teleconference, you requested that Solutia prepare and submit a technical memorandum summarizing our efforts to clean the slurry trench prior to placing additional backfill, and presenting a plan for proceeding with the backfill activities. This letter responds to that request and reflects our discussion over the past week, up to and including our site meeting yesterday, March 24, 2003.

### **Background**

Backfill was last placed in the slurry trench on or about January 23, 2004. At that time, backfill placement became impossible because of prolonged cold weather and Solutia decided to temporarily suspend construction activities during the month of February because of our inability to place backfill. During the shutdown period, slurry levels were maintained in the trench, depth measurements were taken weekly, daily inspections were performed to identify any surface cracking or sloughing, and horizontal control points were monitored to determine if wall movement was occurring.

Equipment and labor were remobilized to the site on March 1, 2004 and trench cleaning operations began on March 9, 2004. Prior to cleaning, a profile of the trench bottom was obtained (on March 8, 2004) which indicated that some material had settled onto the backfill. Trench cleaning continued through March 16, 2004, using the hydraulic clamshell. The procedure involved excavating the bottom of the trench until one full

clam bucket of identifiable backfill was brought up from the bottom. This procedure was used continuously along the entire length of the trench where backfill had been previously placed and visual observations were made to ensure that backfill had been brought to the surface before the crane moved along the trench.

Depth soundings were taken on March 16, 2004 and these indicated that the trench bottom still appeared to be higher than on January 23, 2004 at several locations. Additional soundings were taken on March 17<sup>th</sup> and 18<sup>th</sup>, using a heavier weight and those results confirmed that material was still present on top of the backfill in places. From samples obtained the material on the backfill appeared to be a bentonite-rich material with a lower density than the backfill itself (possibly filter cake that sloughed from the trench walls).

On March 19, 2004, the clamshell rig was repositioned at the toe of the original backfill slope and began removing the lower density material overlying the original backfill.

### **Backfill Plan**

The following procedure will be used to begin placement of new backfill in the slurry trench:

- Trench cleaning is currently proceeding from approximately 60 feet south of the toe of the backfill slope (Station 11+70) northwards to approximately Station 17+80. The current trench bottom is at, or below, the January 23<sup>rd</sup> profile beyond this point, indicating that the backfill slope is clean north of this point. In order to ensure that the lower density material overlying the backfill is removed, the open clam bucket will be lowered at each location to the depth at which the sounding weight encountered refusal. Cleaning will then continue from this depth downward until backfill material is brought to the surface in the clam bucket. The rig will then move forward 12 feet (the width of the open clamshell bucket) and the procedure will be repeated.
- During this portion of the cleaning, trench bottom profiles will be obtained with a 15 pound weight between Stations 10+60 (southern end of the trench) and 17+80 at least once per day to ensure that the cleaned trench bottom is at, or below, the January 23<sup>rd</sup> profile. Those data will be provided to the U.S. EPA oversight contractor personnel on a daily basis.
- Once the trench bottom has been cleaned to Station 17+80, the clamshell rig will begin cleaning the backfill slope again, this time working towards the south (from Station 17+80 towards Station 10+60). Prior to the clamshell starting this second cleaning pass, the entire slurry trench will be sounded to provide a profile of the top of the backfill slope

- At this time backfilling will resume as the clamshell continues to clean to the south (but at a reduced rate as necessary to ensure that the new backfill does not reach the location of the clamshell). Backfill slope profiles will be obtained at least once per day, and more frequently if necessary, to ensure that the toe of the new backfill slope remains behind the clamshell at all times. This will ensure that the new backfill is placed directly on the previous backfill at all locations.

We believe that these procedures are consistent with our discussions over the past week and will satisfy the requirements of the project specifications. I am happy to report that the clamshell made better than expected progress yesterday and today. We should be able to initiate backfilling next week with excavation restarting late in the week or during the week of April 5th.

If you have any questions, please do not hesitate to call.

Sincerely,



Steven D. Smith

cc email only:

Ken Bardo - USEPA  
Sandra Bron - IEPA  
Mike Coffey - USF&W  
Peter Barrett - CH2M Hill  
Dominique Namy, Inquip

Cathy Bumb - Solutia  
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